# Burning And Suppression of Solids (BASS)

**Website: http://issresearchproject.grc.nasa.gov/MSG/BASS**


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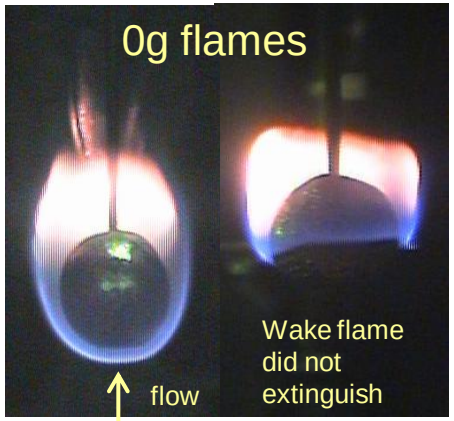
## Objective:

- BASS will bridge the gap between normal gravity NASA-STD-6001 Test # 1 method, ground based microgravity tests, and actual material flammability in microgravity.
- BASS will assess the effectiveness of an inert, gaseous extinguishing agent (similar to that used on ISS) in putting out flames over different materials, geometries, and flow.

*SPICE Experiment Assembly*




## Relevance/Impact:

- Recent drop tower test results show that the reduced convection in 0g increases the flammability of materials, allowing them to burn in lower oxygen environments than in 1g. These results strongly suggest that materials that pass a 1g flammability test may be flammable under the same conditions in 0g with spacecraft ventilation flow.
- Practical, realistic fuels in typical geometries will be examined, including difficult to extinguish wake flames which are shielded from direct extinguishment.

## Development Approach:

- BASS will utilize the on orbit hardware SPICE which was launched on STS-126 and operates in the MSG on ISS.
- Engineering model hardware used for testing purposes.
- Crew required to set up and operate the experiment. Video and data down-linked to the ground for evaluation.
- BASS was launched on Shuttle flight ULF-5 and will be operated during Increment 31-32 on board ISS in the Microgravity Science Glovebox facility.

Revision Date: 03/30/2011

## ISS Resource Requirements

| | |
|---|---|
| **Accommodation (carrier)** | Microgravity Science Glovebox |
| **Upmass (kg)** (w/o packing factor) | 20 |
| **Volume ($m^3$)** (w/o packing factor) | 0.096 |
| **Power (kw)** (peak) | 0.05 |
| **Crew Time (hrs)** (installation/operations) | 30 hours crew time |
| **Autonomous Ops (hrs)** | N/A (all hands on crew ops) |
| **Launch/Increment** | ULF-5/Inc 26 |

## Project Life Cycle Schedule

| Milestones | SCR | RDR | PDR | CDR | SR/DR | Flt Safety | FHA | Launch | Ops | Return | Final Report |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Actual/ Baseline** | N/A | N/A | N/A | 8/1999 | 4/2010 | 5/2010 | 6/2010 | 2/2011 | Inc. 31/32 | OPS + 4 m | Return +12m |
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